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**PATENT ABSTRACTS OF JAPAN**

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(21) Application number: **57023341**

(22) Application date: **16.02.82**

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(84) Designated contracting states:

(71) Applicant: **TOSHIBA CORP  
TOSHIBA ENG CO LTD**

(72) Inventor: **KONISHI KUNIYOSHI  
JINBO YASUSHI  
SHIDA KOJI**

(74) Representative:

**(54) ABNORMALITY  
DETECTING METHOD FOR  
SEMICONDUCTOR LASER  
DEVICE**

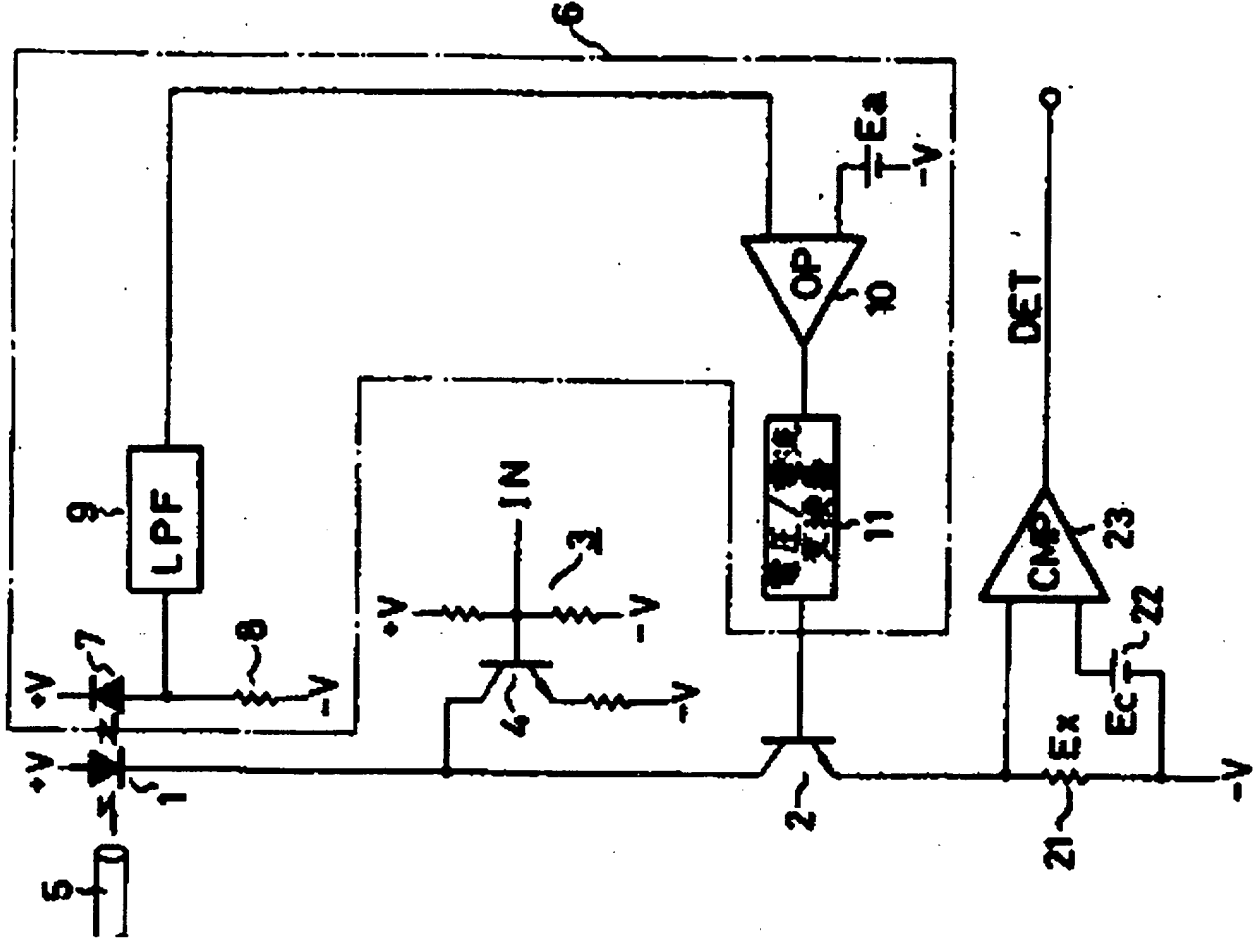
(57) Abstract:

**PURPOSE:** To simply determine and set the reference voltage, to be used as the condition for giving a decision for a semiconductor baser diode (LD), based on the characteristics specified in the specification for the semiconductor laser diode by a method wherein a bias current and

the reference voltage to be determined as abnormal are compared with each other.

**CONSTITUTION:** The photo output of the LD1 is detected and a stabilized circuit 6, with which the bias current to be supplied to the LD so as to stabilize said photo output will be variably controlled, is provided. The bias current is converted, 1 to voltage and a CMP23, with which the output voltage EX and the reference voltage 22 that was set based on the bias current value at which the LD1 will be determined as abnormal, is provided and the detection of abnormality of the LD1 is conducted based on the results of said comparison of the reference voltage 22 and the CMP23, in other words, the detection of the abnormality of LD1 is performed based on the result wherether or not the actual bias current has become larger than the bias current to be determined as abnormal.

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## PATENT ABSTRACTS OF JAPAN

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publication: 05.06.87

(84) Designated contracting  
states:

(71) Applicant: RICOH CO LTD

(72) Inventor: KAMITSUMA MAKOTO

(74) Representative:

### (54) OUTPUT ADJUSTING DEVICE FOR SEMICONDUCTOR LASER

(57) Abstract:

**PURPOSE:** To control the output of a semiconductor laser finely with simple constitution by converting the detection value of the output of the semiconductor laser from analog to digital and determining the value of a current supplied to the semiconductor laser, converting current value data corresponding to the determined current value from digital to analog,

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and supplying the corresponding current to the semiconductor laser.

CONSTITUTION: A microcomputer 31 determines the value of the current supplied to the semiconductor laser 32 based on an A/D converted value from an A/D converter 35 and outputs the digital current value data from a specific port to a D/A converter 36 through a data bus according to the determined current value. This D/A converter 36 converts the current value data from the microcomputer 31 from digital to analog to obtain analog data. The converted value of this D/A converter 36 is converted ( $I/V$ ) into a voltage value by the current- voltage converting circuit composed of an operational amplifier 37, a variable resistor 38, and a resistance 39, and the voltage is supplied to the base of a transistor 41 interposed in the feed path of the semiconductor laser 32.

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